



HENRY CAVENDISH

CAVENDISH has been called the Newton of chemistry, but we must allow that the title is somewhat hyperbolic. Cavendish did not write much; a few papers in the *Philosophical Transactions*, between 1766 and 1809, comprise his publications, but these were composed with such exquisite care, that it has been said each sentence might endure microscopic examination. Sir Humphry Davy, in a lecture delivered shortly after the death of Cavendish, observes, "his processes were all of a finished nature, perfected by the hand of a master; they required no correction; and though many of them were performed in the very infancy of chemical science, yet their accuracy and beauty have remained unimpaired amidst the progress of discovery." When Cavendish began his researches, pneumatic chemistry hardly existed. Different gases were recognized, but they were considered to be mere modifications or admixtures of the common air. One by one cautiously and firmly, he fixed truth after truth beyond dispute. His most notable achievement was his demonstration, in 1781, of the composition of water. Over this discovery there has been considerable controversy, some claiming priority for James Watt; but the fact seems to be, that both Cavendish and Watt reached the same conclusion about the same time by different routes.

The Honorable Henry Cavendish was born in 1731, at Nice, whither his mother, Lady Anne Cavendish, had repaired for the sake of her health, and she died there when he was two years old. Cavendish was educated at a private school at Hackney, whence he proceeded to Cambridge. In early life his tastes were directed to scientific pursuits, to the ultimate exclusion of politics, and all else in which ordinary men take interest. He became an excellent mathematician, electrician, astronomer, meteorologist, geologist, and as a chemist shot far ahead of his contemporaries. Up to his fortieth year, his income was moderate, perhaps not more than £500 a year, but in 1773 an uncle died and left him an enormous fortune.

This accession of wealth did little to change his habits, which had become irrevocably established as those of a methodical recluse. His shyness, his love of solitude, and aversion to society, bordered on disease. To be looked at or addressed by a stranger seemed to give him positive pain, and when approached abruptly, he would start away with a cry or ejaculation as if scared or hurt. At Sir Joseph Banks's soirees he would stand for a long time on the landing, afraid to open the door and face the company, nor would he open it till he heard some one ascending the stairs and then to escape the terror behind faced them in front. At one of these parties Dr. Ingenhousz recited the titles and qualifications of Cavendish in a pompous and formal manner, and introduced to him an Austrian gentleman. The Austrian thereupon launched out into compliments, saying his chief reason for coming to London was to see and converse with one of the greatest ornaments of the age, and one of the most illustrious philosophers that ever existed. To this high-flown verbiage Cavendish answered not a word, but stood with his eyes cast down, abashed and in misery. At last, spying an opening in the crowd, he flew to the door, nor did he stop till he reached his carriage, and drove directly home. Any attempt to draw him into conversation was almost certain to fail, and Dr. Wollaston's recipe for treating with him usually answered best: "The way to talk to Cavendish is never to look at him, but to talk as if it were into vacancy, and then it is not unlikely you may set him going." Professor Playfair, who visited London in 1782, and was frequently at the meetings of the Royal Society Club, remarks: "Mr. Cavendish is a member of this meeting. He is of an awkward appearance, an has not much of the look of a man of rank. He speaks likewise with great difficulty and hesitation, and very seldom. But the gleams of genius break often through this unpromising exterior. He never speaks at all, but it is exceedingly to the purpose, and either brings some excellent information, or draws some important conclusion."

Cavendish's town-house was near the British Museum, at the corner of Gower Street and Montague Place. Few visitors were admitted, and some who were permitted to cross its threshold reported that books and apparatus were his chief furniture. He collected a large library of scientific literature, and willing to have it made useful, but not to be troubled with readers or borrowers, he hired a house for its reception in Dean Street, Soho, and kept a librarian. When he wanted one of his own books, he went there as to a circulating library, and left a formal receipt for whatever he took away. His favorite residence was a beautiful villa at Clapham, nearly the whole of which was occupied as workshops. The upper rooms were an observatory; the drawing-room was a laboratory; and in an ante-room was a forge. On the lawn was a wooden stage, from which access could be had to a large tree, to the top of which Cavendish, in the course of his astronomical, meteorological, and electrical experiments,

occasionally ascended. For beauty he seemed quite indifferent. His apparatus, always exact and accurate so far as essential, was constructed of the cheapest material, and without any regard for symmetry.

His few guests were treated on all occasions to the same fare—a leg of mutton, and nothing else. Four scientific men were to dine with him one day, and what was to be got for dinner, he said a leg of mutton. "Sir," said she, "that will not be enough for five." "Well, then, get two," was his reply. His heir, Lord George Cavendish, visited him once a year, and was allowed an audience of but half-an-hour. His great income was allowed to accumulate without attention. The bankers where he kept his account found they had a balance of £80,000 on hand, and sent a messenger to confer with him regarding it. The messenger was announcing, and Cavendish, in great agitation, desired him to be sent up,